



PATENTS

Attorney Docket No.: ELM-1 Cont.9

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Glenn J. Leedy

Application No.: 10/665,757 Confirmation No.: 6828

Filed

: September 19, 2003

For

: METHOD OF MAKING AN INTEGRATED CIRCUIT

(AS AMENDED)

Group Art Unit : 2822

Examiner

: Pamela E. Perkins

Commissioner for Patents

P.O. Box 1450

Alexandria, Virginia 22313-1450

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

Sir:

In accordance with 37 C.F.R. §§ 1.56 and 1.97, applicant wishes to call the attention of the Examiner to the following documents:

τ	J.	. S	. Р	at	en	t	Doc	uments

Sobczak	08-05-1986	US	4,604,162
Butt et al.	07-18-1989	US	4,849,857
Williamson	05-22-1990	US	4,928,058
Sliwa	02-05-1991	US	4,990,462
Kessler et al.	05-05-1992	US	5,110,712
Sliwa et al.	06-02-1992	US	5,119,164
Moslehi	02-08-1994	US	5,284,804
Clifton et al.	01-02-1996	US	5,480,842
Sachdev et al.	11-28-1995	US	5,470,693
Flesher et al.	03-31-1998	US	5,733,814
Clifton et al.	04-09-2002	US	Re 37,637

Foreign Patent Documents

EP	0	201	380	В1	12-17-1986	Fairchild Semiconductor Corporation
EP	0	224	418	B1	06-03-1987	Fujitsu Limited
EP	0	419	898	В1	04-03-1991	Siemens Aktiengesellschaft
EP	0	455	455	В1	11-06-1991	AT&T Corp.
EP	0	487	302	В1	05-27-1992	Shin-ETSU Handotai Company Limited
EP	0	503	816	В1	09-16-1992	Shin-ETSU Handotai Company Limited
EP	0	518	774	B1	12-16-1992	France Telecom
EP	0	526	551	В1	02-10-1993	The Commonwealth of Australia
ΕP	0	554	063	B1	08-04-1993	Canon Kabushiki Kaisha
EP	0	555	252	B1	08-18-1993	Fraunhoffer-Gesellschaft Zur Förderung Der Angewandten Forschung E.V
WO	19	989 (01025	5	11-02-1989	3D Systems Inc.
WO	19	990 (00909	3	08-23-1990	Polylithics Inc.
WO	19	992 (01790	1	10-15-1992	Integrated System Assemblies Corporation

Nonpatent Literature Documents

Jones, R.E., Jr. "An evaluation of methods for passivating silicon integrated circuits"; April 1972; pp. 23-8

Svechnikov, S.V.; Kobylyatskaya, M.F.; Kimarskii, V.I.; Kaufman, A.P.; Kuzovlev, Yu. I.; Cherepov, Ye. I.; Fomin, B.I.; "A switching plate with aluminum membrane crossings of conductors"; 1972

Sun, R.C.; Tisone, T.C.; Cruzan, P.D.; "Internal stresses and resistivity of low-voltage sputtered tungsten films (microelectronic cct. conductor)"; March 1973; pp. 1009-16

Wade, T.E.; "Low temperature double-exposed polyimide/oxide dielectric for VLSI multilevel metal interconnection"; 1982; pp. 516-19

Nonpatent Literature Documents

Boyer, P.K.; Collins, G.J.; Moore, C.A.; Ritchie, W.K.; Roche, G. A.; Solanski, R. (A); Tang, C.C.; "Microelectronic thin film deposition by ultraviolet laser photolysis MONOGRAPH TITLE - Laser processing of semiconductor devices"; 1983; pp. 120-126

Boyer, P.K.; Moore, C.A.; Solanki, R.; Ritchie, W.K.; Roche, G.A.; Collins, G.J.; "Laser photolytic deposition of thin films"; 1983; pp. 119-27

Chen, Y.S.; Fatemi, H.; "Stress measurements on multilevel thin film dielectric layers used in Si integrated circuits"; May-June 1986; pp. 645-9

Salazar, M.; Wilkins, C.W., Jr.; Ryan, V.W.; Wang, T.T.; "Low stress films of cyclized polybutadiene dielectrics by vacuum annealing"; Oct. 21-22, 1986; pp. 96-102

Townsend, P.H.; Huggins, R.A.; "Stresses in borophosphosilicate glass films during thermal cycling"; Oct. 21-22, 1986; pp. 134-41

Pai, Pei-Lin; "Multilevel Interconnection Technologies--A Framework And Examples"; 1987; pp. 1871

Pei-lin Pai; Chetty, A.; Roat, R.; Cox, N.; Chiu Ting; "Material characteristics of spin-on glasses for interlayer dielectric applications"; November 1987, pp. 2829-34

Allen, Mark G.,; Senturia, Stephen D.; "Measurement of polyimide interlayer adhesion using microfabricated structures"; 1988; pp. 352-356

Chang, E.Y.; Cibuzar, G.T.; Pande, K.P.; "Passivation of GaAs FET's with PECVD silicon nitride films of different stress states"; September 1988; pp. 1412-18

Riley, P.E.; Shelley, A.; "Characterization of a spin-applied dielectric for use in multilevel metallization"; May 1988; pp. 1207-10

Tamura, H.; Nishikawa, T.; Wakino, K.; Sudo, T.; "Metalized MIC substrates using high K dielectric resonator materials"; October 1988; pp. 117-126

Kochugova, I.V.; Nikolaeva, L.V.; Vakser, N.M., (M.I. Kalinin Leningrad Polytechnic Institute (USSR); "Electrophysical investigation of thin-layered inorganic coatings"; 1989; pp. 826-828

Nonpatent Literature Documents

Reche, J.J. H.; "Control of thin film materials properties used in high density multichip interconnect"; April 24-28, 1989; p. 494

Maw, T.; Hopla, R.E.; "Properties of a photoimageable thin polyimide film"; Nov. 26-29-, 1990; pp. 71-6

Draper, B. L.; Hill, T.A.; "Stress and stress relaxation in integrated circuit metals and dielectrics"; July-Aug. 1991; pp. 1956-62

Guckel, H.; "Surface micromachined pressure transducers"; 1991; pp. 133-146

Garino, T.J.; Harrington, H. M.; "Residual stress in PZT thin films and its effect on ferroelectric properties'; 1992; pp. 341-7

The aforementioned references are listed on the accompanying Form PTO-SB/08 (submitted in duplicate).

Pursuant to 37 C.F.R. § 1.98(a)(2), no copies of the aforementioned U.S. Patent Documents are being submitted.

Copies of the listed Foreign Patent Documents and Nonpatent Literature Documents are being submitted herewith.

Applicant reserves the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered.

It is respectfully requested that these references be: (1) fully considered by the Patent and Trademark Office during the examination of this application; and (2) printed on any patent which may issue on this application. Applicant requests that a copy of Form PTO-SB/08, as considered and initialled by the Examiner, be returned with the next communication.

The Clifton and Flesher U.S. Patent Documents (U.S. Patent Nos. 5,480,842, 5,733,814, and Re 37,637) were cited in an Office Action mailed in co-pending commonly assigned U.S. Patent Application No. 10/614,067 on September 21, 2005. Butt et al. U.S. Patent No. 4,849,857 was cited in an Office Action mailed in co-pending commonly assigned U.S. Patent Application No. 10/971,341 on September 20, 2005.

The remaining references cited in this Information Disclosure Statement were brought to applicant's attention in a third-party search conducted less than three month before filing of this Statement. A copy of the third-party search results is enclosed herewith.

This Statement is submitted after the mailing date of the first Office Action on the merits. However, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in this Supplemental Information Disclosure Statement was known to any individual designated in § 1.56 (c) more than three months prior to the filing of this Statement. Pursuant to 37 C.F.R. § 1.97(c)(1), applicant believes no fee is due in connection with this statement. However, if for any reason a fee is due, the Director is hereby authorized to charge payment any fees required in connection with this Statement, or credit any overpayment of the same, to Deposit Account No. 06-1075 (Order No.: 001202.0116). A duplicate copy of this Supplemental Information Disclosure Statement is enclosed herewith.

An early and favorable action is respectfully requested.

Respectfully submitted,

Jeffrey C. Aldridge

Registration No. 51,390

Agent for Applicant

FISH & NEAVE IP GROUP

ROPES & GRAY LLP

Customer No. 1473

1251 Avenue of the Americas

New York, New York 10020-1105

Tel.: (212) 596-9000

Fax: (212) 596-9090

I hereby certify that this Correspondence is being deposited with the U.S.

Postal Service as First Class Mail in an envelope

Addressed to:

Commissional for Patents

P.O. Box 1460

Alexandria, VA 22313-1450 on

Signature of Process Standing



PTO/SB/08a/b (08-03)
Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/B/PTO			Complete if Known				
				Application Number	(Conf. No. 6828)		
11	IFORMATIO	N DIS	SCLOSURE	Filing Date September 19, 2		2003	
S	TATEMENT	BY A	PPLICANT	First Named Inventor	med Inventor Glenn J. Leedy		
				Art Unit	2822		
	(Use as many s	sheets as	necessary)	Examiner Name	Pamela E. Perkins		
Sheet	1	of	3	Attorney Docket Number	ELM-1 Cont.9		

	U.S. PATENT DOCUMENTS							
Examiner	Cite	Document Number	Publication Date	Name of Patentee or	Pages, Columns, Lines, Where Relevant Passages or Relevant			
Initials*	No.1	Number-Kind Code ² (if known)	MM-DD-YYYY	Applicant of Cited Document	Figures Appear			
		US 4,604,162	08-05-1986	Sobczak				
		US 4,849,857	07-18-1989	Butt et al.				
		US 4,928,058	05-22-1990	Williamson				
		US 4,990,462	02-05-1991	Sliwa.				
		US 5,110,712	05-05-1992	Kessler et al.				
		US 5,119,164	06-02-1992	Sliwa et al.				
		US 5,284,804	02-08-1994	Moslehi				
		US 5,480,842	01-02-1996	Clifton et al.				
		US 5,470,693	11-28-1995	Sachdev et al.				
		US 5,733,814	03-31-1998	Flesher et al.				
		US Re 37,637	04-09-2002	Clifton et al.				

		FOREI	GN PATENT	DOCUMENTS		
Examiner Initials*	Cite No.1	Foreign Patent Document Country Code ³ -Number ⁴ -Kind Code ⁵ (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	
		EP 0 201 380 B1	12-17-1986	Fairchild Semiconductor Corporation		
		EP 0 224 418 B1	06-03-1987	Fujitsu Limited		
		EP 0 419 898 B1	04-03-1991	Siemens Aktiengesellschaft		
		EP 0 455 455 B1	11-06-1991	AT&T Corp.		
		EP 0 487 302 B1	05-27-1992	Shin-ETSU Handotai Company Limited		
		EP 0 503 816 B1	09-16-1992	Shin-ETSU Handotai Company Limited		
		EP 0 518 774 B1	12-16-1992	France Telecom		
		EP 0 526 551 B1	02-10-1993	The Commonwealth of Australia		
	l	EP 0 554 063 B1	08-04-1993	Canon Kabushiki Kaisha		
		EP 0 555 252 B1	08-18-1993	Fraunhoffer-Gesellschaft Zur Förderung Der Angewandten Forschung E.V		
		WO 1989 010255	11-02-1989	3D Systems Inc.		
		WO 1990 009093	08-23-1990	Polylithics Inc.		
		WO 1992 017901	10-15-1992	Integrated System Assemblies Corporation		

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹Applicant's unique citation designation number (optional). ²See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³ Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁶ Applicant is to place a check mark here if English language Translation is attached.

Examiner	Date	
Signature	Considered	<u> </u>

PTO/SB/08a/b (08-03)
Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Sub	ostitute for form 1449A/B/PT	0			September 19, 2003 Glenn J. Leedy 2822 Pamela E. Perkins	ın	
•••		-		Application Number 10/665,757 (Conf. No. 682			
l IN	NFORMATION	I DI	SCLOSURE	Filing Date	September 19	, 2003	
S	STATEMENT BY APPLICANT			First Named Inventor	Glenn J. Leed	ly	
				Art Unit	2822		
	(Use as many she	eets as	s necessary)	Examiner Name	Pamela E. Perkins		
Sheet	2	of	3	Attorney Docket Number	ELM-1 Cont.9		

		NON PATENT LITERATURE DOCUMENTS	
Examiner Initials	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T²
		Jones, R.E., Jr. "An evaluation of methods for passivating silicon integrated circuits"; April 1972; pp. 23-8	
		Svechnikov, S.V.; Kobylyatskaya, M.F.; Kimarskii, V.I.; Kaufman, A.P.; Kuzovlev, Yu. I.; Cherepov, Ye. I.; Fomin, B.I.; "A switching plate with aluminum membrane crossings of conductors"; 1972	
		Sun, R.C.; Tisone, T.C.; Cruzan, P.D.; "Internal stresses and resistivity of low-voltage sputtered tungsten films (microelectronic cct. conductor)"; March 1973; pp. 1009-16	
		Wade, T.E.; "Low temperature double-exposed polyimide/oxide dielectric for VLSI multilevel metal interconnection"; 1982; pp. 516-19	
		Boyer, P.K.; Collins, G.J.; Moore, C.A.; Ritchie, W.K.; Roche, G. A.; Solanski, R. (A); Tang, C.C.; "Microelectronic thin film deposition by ultraviolet laser photolysis MONOGRAPH TITLE - Laser processing of semiconductor devices"; 1983; pp. 120-126	
		Boyer, P.K.; Moore, C.A.; Solanki, R.; Ritchie, W.K.; Roche, G.A.; Collins, G.J.; "Laser photolytic deposition of thin films"; 1983; pp. 119-27	
		Chen, Y.S.; Fatemi, H.; "Stress measurements on multilevel thin film dielectric layers used in Si integrated circuits"; May-June 1986; pp. 645-9	
		Salazar, M.; Wilkins, C.W., Jr.; Ryan, V.W.; Wang, T.T.; "Low stress films of cyclized polybutadiene dielectrics by vacuum annealing"; Oct. 21-22, 1986; pp. 96-102	:
		Townsend, P.H.; Huggins, R.A.; "Stresses in borophosphosilicate glass films during thermal cycling"; Oct. 21-22, 1986; pp. 134-41	
		Pai, Pei-Lin; "Multilevel Interconnection TechnologiesA Framework And Examples"; 1987; pp. 1871	
		Pei-lin Pai; Chetty, A.; Roat, R.; Cox, N.; Chiu Ting; "Material characteristics of spin-on glasses for interlayer dielectric applications"; November 1987, pp. 2829-34	
		Allen, Mark G.,; Senturia, Stephen D.; "Measurement of polyimide interlayer adhesion using microfabricated structures"; 1988; pp. 352-356	
		Chang, E.Y.; Cibuzar, G.T.; Pande, K.P.; "Passivation of GaAs FET's with PECVD silicon nitride films of different stress states"; September 1988; pp. 1412-18	
		Riley, P.E.; Shelley, A.; "Characterization of a spin-applied dielectric for use in multilevel metallization"; May 1988; pp. 1207-10	
	-	Tamura, H.; Nishikawa, T.; Wakino, K.; Sudo, T.; "Metalized MIC substrates using high K dielectric resonator materials"; October 1988; pp. 117-126	
		Kochugova, I.V.; Nikolaeva, L.V.; Vakser, N.M., (M.I. Kalinin Leningrad Polytechnic Institute (USSR); "Electrophysical investigation of thin-layered inorganic coatings"; 1989; pp. 826-828	
		Reche, J.J. H.; "Control of thin film materials properties used in high density multichip interconnect"; April 24-28, 1989; p. 494	

Examiner	Date	
Signature	Considered	

PTO/SB/08a/b (08-03)

Approved for use through 07/31/2006. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Sub	Substitute for form 1449A/B/PTO			Complete if Known				
000				Application Number	10/665,757	(Conf. No. 6828)		
11	NFORMATI	ON DIS	SCLOSURE	Filing Date	9, 2003			
S	TATEMEN	T BY A	PPLICANT	First Named Inventor	Glenn J. Leed	dy		
				Art Unit	2822			
	(Use as man	y sheets as	necessary)	Examiner Name	Pamela E. Perkins			
Sheet	3	of	3	Attorney Docket Number	ELM-1 Cont.9)		

	NON PATENT LITERATURE DOCUMENTS								
Examiner Initials	Cite No.1	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.	T²						
		Maw, T.; Hopla, R.E.; "Properties of a photoimageable thin polyimide film"; Nov. 26-29-, 1990; pp. 71-6							
		Draper, B. L.; Hill, T.A.; "Stress and stress relaxation in integrated circuit metals and dielectrics"; July-Aug. 1991; pp. 1956-62							
	-	Guckel, H.; "Surface micromachined pressure transducers"; 1991; pp. 133-146							
		Garino, T.J.; Harrington, H. M.; "Residual stress in PZT thin films and its effect on ferroelectric properties'; 1992; pp. 341-7							

^{*}EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Examiner	-	Date	
Signature		Considered	

¹Applicant's unique citation designation number (optional). ²Applicant is to place a check mark here if English language Translation is attached.